APPROVED BY DRAFTSMAN | O.G. FIG. 3 | CLASS 714 | SUBCLASS 746

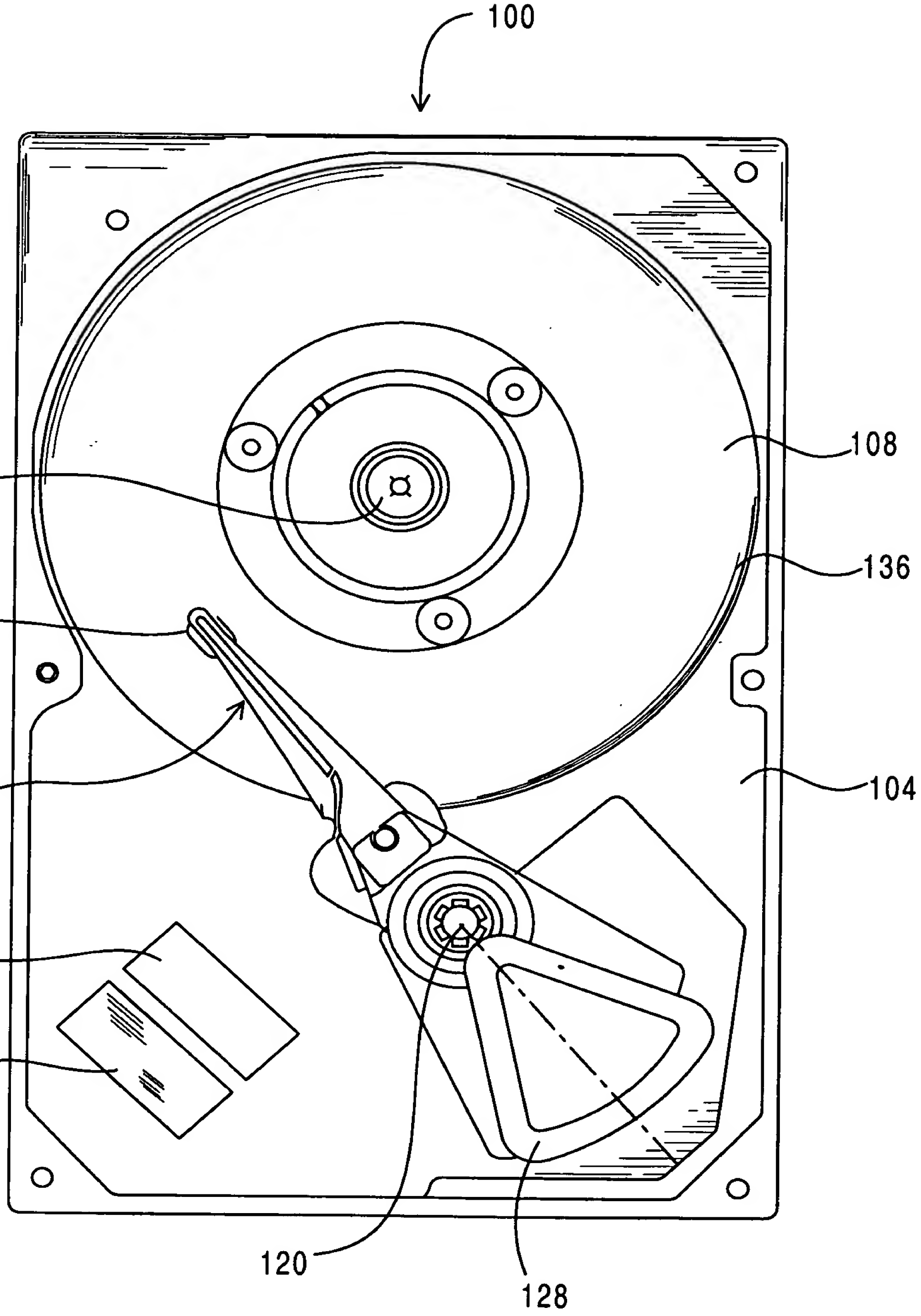

FIG. 1

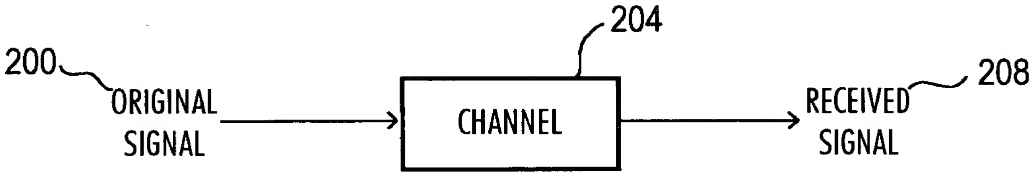
200
ORIGINAL SIGNAL
204
CHANNEL
208
RECEIVED SIGNAL

FIG. 2

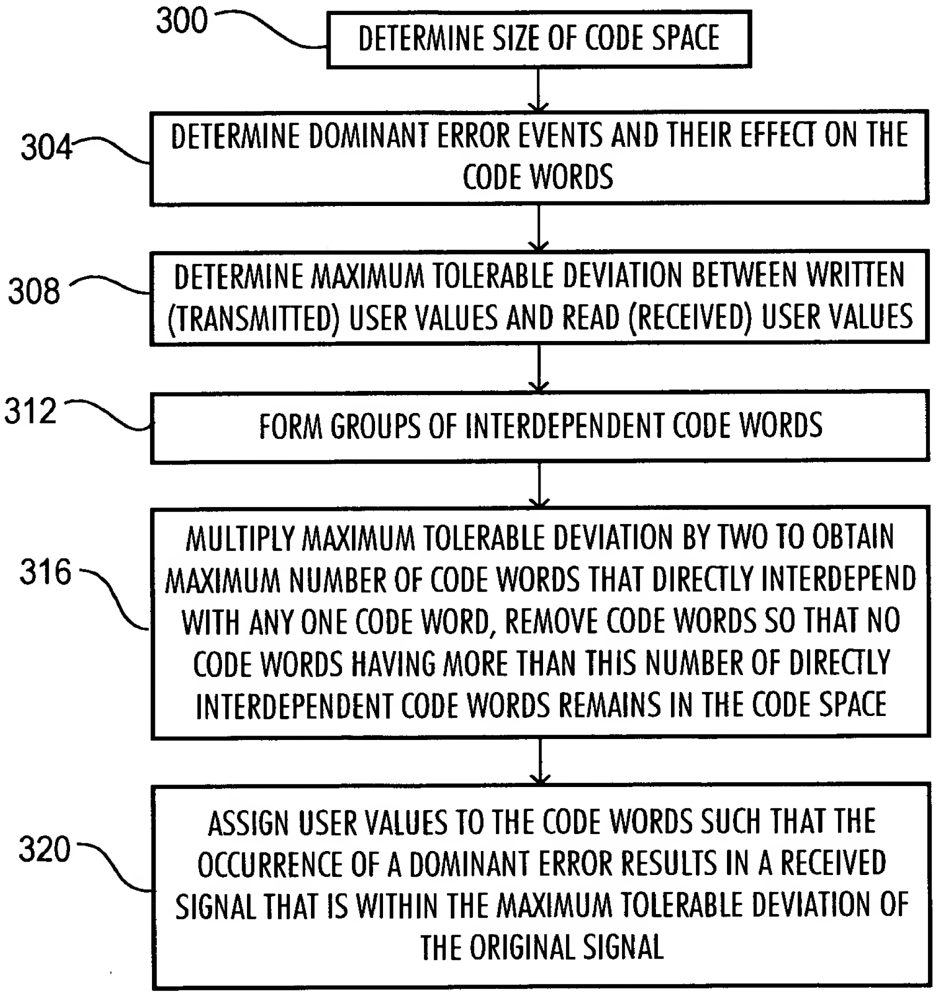
300
DETERMINE SIZE OF CODE SPACE
304
DETERMINE DOMINANT ERROR EVENTS AND THEIR EFFECT ON THE CODE WORDS
308
DETERMINE MAXIMUM TOLERABLE DEVIATION BETWEEN WRITTEN (TRANSMITTED) USER VALUES AND READ (RECEIVED) USER VALUES
312
FORM GROUPS OF INTERDEPENDENT CODE WORDS
316
MULTIPLY MAXIMUM TOLERABLE DEVIATION BY TWO TO OBTAIN MAXIMUM NUMBER OF CODE WORDS THAT DIRECTLY INTERDEPEND WITH ANY ONE CODE WORD, REMOVE CODE WORDS SO THAT NO CODE WORDS HAVING MORE THAN THIS NUMBER OF DIRECTLY INTERDEPENDENT CODE WORDS REMAINS IN THE CODE SPACE
320
ASSIGN USER VALUES TO THE CODE WORDS SUCH THAT THE OCCURRENCE OF A DOMINANT ERROR RESULTS IN A RECEIVED SIGNAL THAT IS WITHIN THE MAXIMUM TOLERABLE DEVIATION OF THE ORIGINAL SIGNAL

FIG. 3

400 404 408 412 416

USER VALUE	BINARY CODE DECIMAL EQUIVALENT	BINARY CODE	NEIGHBORS	MAXIMUM VARIANCE
0	0	00000		
1	1	00001		
2	2	00010	10	+8
3	3	00011	11, 10, 2	+8
4	4	00100	20, 21, 5	+17
5	5	00101	21	+16
6	6	00110	22	+16
7	7	00111	5, 21, 23	+16
8	8	01000	10	+2
9	9	01001		
10	10	01010		
11	11	01011	10	-1
12	12	01100	13	+1
13	13	01101		
14	14	01110	10	-4
15	15	01111		
16	16	10000		
17	17	10001	21	+4
18	18	10010		
19	19	10011	18	-1
20	20	10100	21	+1
21	21	10101		
22	22	10110		
23	23	10111	21	-2
24	24	11000	26, 10, 8	-16
25	25	11001	9	-16
26	26	11010	10	-16
27	27	11011	11, 10, 26	-16
28	28	11100	20, 21, 29	-8
29	29	11101	21	-8
30	30	11110		
31	31	11111		

FIG. 4

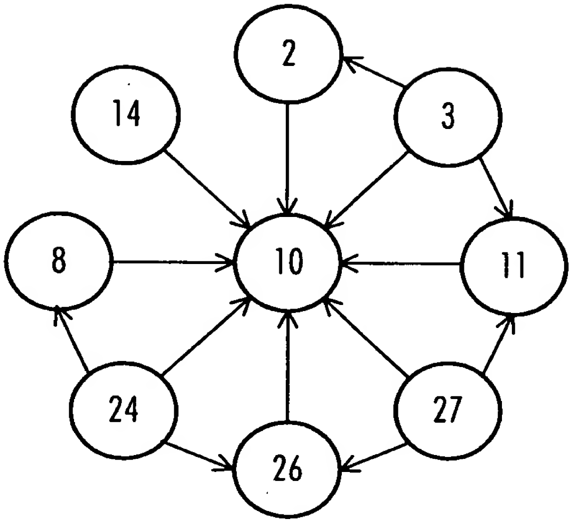

FIG. 5A

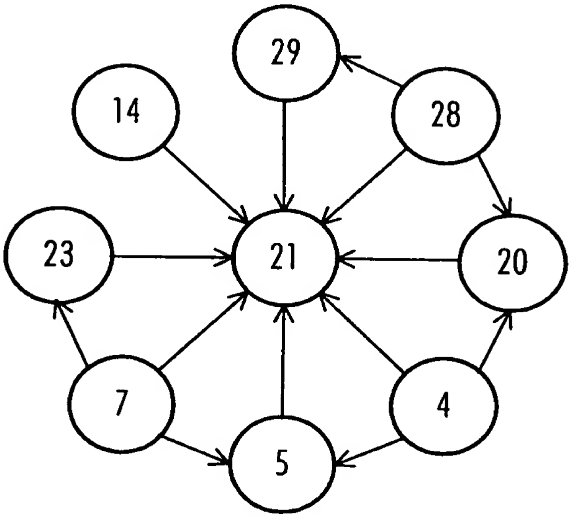

FIG. 5B

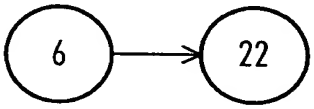

FIG. 5C

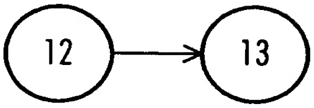

FIG. 5E

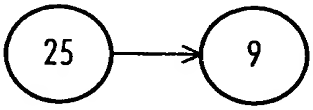

FIG. 5D

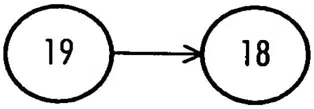

FIG. 5F

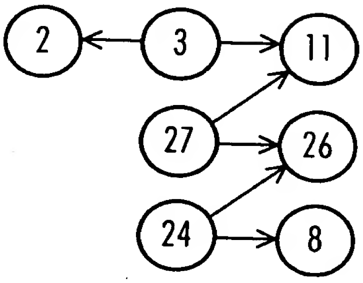

FIG. 6A

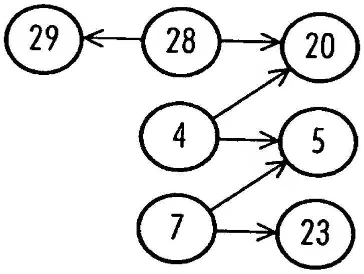

FIG. 6B

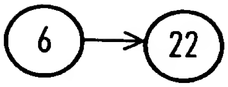

FIG. 6C

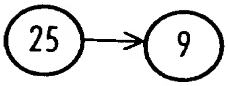

FIG. 6D

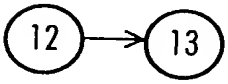

FIG. 6E

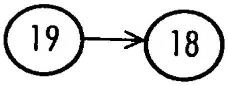

FIG. 6F

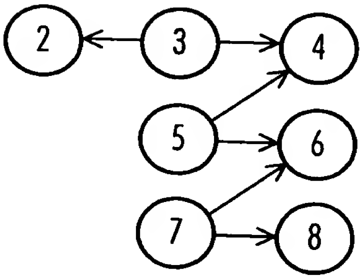

FIG. 7A

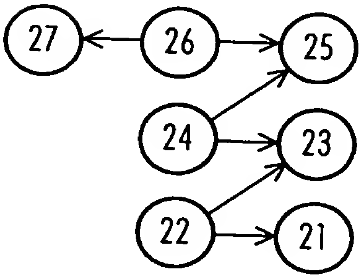

FIG. 7B

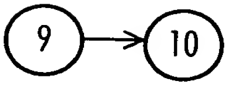

FIG. 7C

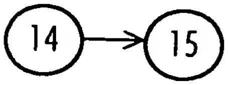

FIG. 7D

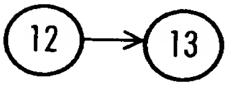

FIG. 7E

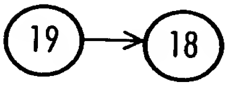

FIG. 7F

800 804 808 812 816

USER VALUE	BINARY CODE DECIMAL EQUIVALENT	BINARY CODE	NEIGHBORS	MAXIMUM VARIANCE
0	0	00000		
1	1	00001		
2	2	00010		
3	3	00011	4, 2	±1
24	4	00100	25, 23	±1
23	5	00101		
9	6	00110	10	±1
22	7	00111	23, 21	±1
8	8	01000		
15	9	01001		
—	—	—		
4	11	01011		
12	12	01100	13	+1
13	13	01101		
11	14	01110		
20	15	01111		
16	16	10000		
17	17	10001		
18	18	10010		
19	19	10011	18	-1
25	20	10100		
—	—	—		
10	22	10110		
21	23	10111		
7	24	11000	6	-1
14	25	11001	15	+1
6	26	11010		
5	27	11011	4, 6	±1
26	28	11100	25, 27	±1
27	29	11101		
28	30	11110		
29	31	11111		

FIG. 8

900 904 908 912 916

USER VALUE	BINARY CODE DECIMAL EQUIVALENT	BINARY CODE	NEIGHBORS	MAXIMUM VARIANCE
0	0	00000		
1	1	00001		
2	2	00010		
3	3	00011	4, 2	±1
24	4	00100	25, 23	±1
23	5	00101		
9	6	00110	10	±1
22	7	00111	23, 21	±1
8	8	01000		
15	9	01001		
—	—	—		
4	11	01011		
12	12	01100	13	+1
13	13	01101		
11	14	01110		
20	15	01111		
16	16	10000		
17	17	10001		
18	18	10010		
19	19	10011	18	-1
25	20	10100		
—	—	—		
10	22	10110		
21	23	10111		
7	24	11000	6	-1
14	25	11001	15	+1
6	26	11010		
5	27	11011	4, 6	±1
26	28	11100	25, 27	±1
27	29	11101		
28	30	11110	29	+1
29	30	11110	28	-1
30	31	11111	31	+1
31	31	11111	30	-1

FIG. 9